

GREENE (C.L.)

INDEX

THE TREATMENT OF CHRONIC
HEART DISEASE

BY THE

SCHOTT METHOD.

BY

CHARLES L. GREENE, M. D.

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THE TREATMENT OF CHRONIC HEART DISEASE BY THE SCHOTT METHOD.*

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So much has been written and so little of positive value achieved in the matter of treatment of chronic diseases of the heart that one feels almost constrained to preface by an apology any further addition to this class of literature, unless he can add something of real value to the practice now in vogue. Believing that the treatment to be discussed in this paper is a distinct advance over previous methods, the writer will omit the apology, and endeavor to make good his claim to your kind consideration and attention.

It has long been recognized that two indications must be met in the treatment of a weakened heart: First, that the peripheral circulation must be freed and the tension and venous stasis thus relieved; second, that the poisons resulting from suboxidation

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and accumulating in the system must be destroyed or removed.

No treatment by drugs has ever sufficed to fulfil entirely the two indications, nor have rest and graduated exercise, valuable though they are, fully met our needs. There is nothing more confusing to the average mind than a study of cardiac therapeutics, and we are somewhat disappointed in comparing their trifling progress with the rapid and satisfactory advance in the direction of accurate diagnosis.

We would naturally seek to find an ideal method which should combine rest for the heart and exercise for the muscles in such a way as to fulfil our two previously mentioned requirements, and it would appear that such a method has been in actual use for many years at Bad Nauheim, in Germany, where two or three sagacious and scientific men have, for two decades, worked successfully along the lines they have developed without securing any general recognition of or credit for their rational and successful work.

The brothers August and Theodor Schott, the former now deceased, seem to be entitled to the credit of developing and perfecting this system, which bears their name, and has at last received favorable attention from their transatlantic brethren.

Their treatment is simplicity itself, consisting merely of the use of saline baths and a series of resisted movements.

The baths and movements are used separately or in combination as the case demands.

Nauheim boasts a system of natural springs which, by their temperature and saline and gaseous constituents, are admirably adapted to the purpose for which they are used, but Dr. Theodor Schott has, with admirable honesty, stated again and again that artificially prepared baths properly used would accomplish all that the natural baths could do, and judging by the writer's own experience, this claim is amply borne out in practice.

An examination of the published analysis of the Nauheim baths shows the chief constituents to be sodium chloride, calcium chloride and free carbonic acid gas. The temperature of those most used varies from 95° to 81° Fahrenheit. Patients remain immersed in these baths for a period varying from three or four to twelve or fifteen minutes, the shorter period being used at first and the period of immersion gradually lengthened. They are in all cases followed by an hour of absolute rest, and are never repeated for more than four days in succession.

The effect of these baths is so remarkable as to severely tax the credulity of one who has never witnessed their administration, and may be formulated as follows:

There is (1) a short period of oppression and discomfort (seldom noted by the writer), rapidly yielding to (2) a feeling of well-being amounting to exhilaration, particularly if the free CO_2 is used in the preparation of the bath; (3) marked slowing of the pulse and respiration; (4) increased fulness of the pulse; (5) reddening of the skin and nails, and improved color of mucous membranes;

(6) recession of the cardiac area, often to the extent of several centimetres

The patient's feelings are of the most agreeable description, and, as a rule, he looks forward with pleasant anticipation to the bathing hour.

Now, without discussing the theory upon which these phenomena depend, we are left in no doubt as to what occurs.

The flushing of the skin and improved color of the nails and the mucous membranes, the slowed, well filled pulse and deeper respiration, the recession of the apex beat and lines of cardiac dullness tell plainly of dilated capillaries, with resulting drainage of engorged areas, diminished tension and a resting and deliberately contracting heart. These effects are not evanescent, and a gradual improvement is noted each day. No good is accomplished by immersion beyond the maximum period of fifteen minutes.

The resisted movements if properly carried out produce almost precisely the same effects, but require the nicest judgment and discrimination in their application. They are nineteen in number, and you will get an accurate idea of their character from the photographs which are placed in your hands, Nos. 4 to 23 inclusive, for valuable assistance in the preparation of which the writer is indebted to Dr. George E. Senkler, of St. Paul.

Simple yet scientifically adapted to the bringing into action of the different muscle groups, they are intended to exercise the patient without causing fatigue, and to properly carry them out the following points need to be clearly borne in mind:

1. All clothing must be loose.
2. The breathing must be full and regular throughout the exercises.
3. No movement is to be repeated in the same limb or muscle group.
4. A short interval of rest follows each movement.
5. The slightest indication of fatigue, such as increased pulse rate or palpitation, pallor or lividity, sweating, etc., demands cessation of exercises.
6. The resistance offered to the proposed movement and the number and kind of movements performed must be determined by the individual case in hand. Some patients are bed-ridden and weak, others ambulant and comparatively vigorous, and the operator's judgment must here come in play.

Properly carried out the movements are a valuable adjunct to treatment by baths, and, as before stated, produce the same phenomena.

The personal experience of the writer extends over a period of one year, and embraces a considerable number of cases, all of which have received benefit. Five of these are quoted, representing four distinct types of cardiac disease.

CASE I. EXTREME DILATATION OF HEART WITH MITRAL STENOSIS AND REGURGITATION AND SECONDARY TRICUSPID REGURGITATION.

The patient, Frank G., a Bohemian, was admitted to the writer's service at the City and County Hospital in October, 1894, apparently moribund, pulse rapid, weak, irregular and unequal, respira-

tion rapid and shallow, profound cyanosis, ascites, pulmonary œdema, extreme soft œdema of legs and thighs, enlarged liver and spleen, apex beat wavy and diffuse, maximum impulse in midaxillary line, enormous area of superficial cardiac dulness, as shown in the picture now placed in your hands. A loud presystolic murmur was heard at the apex associated with a presystolic thrill in the same area, and there were two distinct systolic murmurs, one at the apex transmitted outwards to the axilla and back, the other in the tricuspid area heard best at the ensiform, low pitched and soft in character. The impulse was feeble, wavy, and indicated an extreme degree of ventricular weakness.

Patient's family history gave evidence of hereditary tendency to vascular degeneration; he had been a somewhat heavy drinker and a hard worker in a laborious occupation. He had had symptoms of failing compensation for two years prior to admission. The prognosis was most unfavorable, and death was expected within twenty-four hours. Powerful cardiac stimulants were first resorted to, and, finally, in desperation the saline baths were ordered. The patient was carried to and from his bed and lifted in and out of the bath, all exertion being absolutely forbidden. The result was almost magical. The first increase of dyspnœa was rapidly succeeded by a feeling of comfort. His pulse steadied and filled, and the recession of the apex beat and left and right borders of the heart was evident upon percussion; unfortunately the exact measurements after the initial bath are wanting for

this case. You see, however, by the photograph the astounding change in the superficial area, and will note that the apex is nearly in the nipple line, and that the right border is normal after an eight-weeks' course of treatment. The tricuspid murmur was lost after about six baths were given. Modified movements were used in this case as he became stronger, and seemed to reinforce the good effect of the baths.

Patient is now, six months later, at work on the streets, against most earnest protest on our part, and still maintains a fair state of health.

CASE II.

W., a young man 20 years of age, presents himself at the office of the writer, with a history of occasional attacks of palpitation, precordial pain and faintness extending over a period of several years.

Family history indicates vascular degeneration on both paternal and maternal sides. Patient is fond of athletic sports, but has never carried them to excess. Habits excellent, general health fairly good. No history of acute illness; no venereal history.

Apex was found to be displaced about 2 centimetres outside the nipple line, auscultatory percussion revealed the left border about $2\frac{1}{2}$ c. m. to the left of the nipple line; pulse, 95 sitting; apex beat somewhat forcible; superficial dulness passed inward to the mid-sternum; a slight pre-systolic rumble was heard at the apex.



Case II. W. (Office). Before treatment.

F B D. Left border.

E C D. *Superficial* cardiac area shaded to show its right border in mid-sternal line.

After two weeks of treatment he presented himself with a heart normal in size and action, with complete relief from troublesome symptoms, and with no perceptible murmur.

Kindly refer to pictures Nos. 26 and 27 in your hands, and note the relative percussion areas there indicated. The recession of the left border in this case was $4\frac{1}{2}$ c. m.; right border of superficial dulness receded to the left sternal line.

CASE III. EXOPHTHALMIC GOITRE.

Miss I., age 38. Private patient. Distinct family history of vascular degeneration and neuro-pathic taint. Exophthalmos and goitrous enlargement marked. Pulse, 120 sitting; heart action irregular and forcible. Apex beat and left border 2 c. m. outside the nipple line; superficial cardiac area extends to the mid sternum; well-defined systolic murmur at the apex carried outwards through the axilla. After having been under observation two years without marked improvement under various methods of treatment, she was ordered to use the saline baths without exercises. Four weeks later: Pulse, 90 sitting; heart action less violent; apex beat at the nipple line; goitrous enlargement markedly diminished; exophthalmos but slightly marked; considers herself quite well; murmur is still present, and the case is still under observation and treatment.

CASE IV.

Mrs. K., age 35. Is brought to office for relief of distressing dyspnœa and severe cough, with



Case H. W. After two weeks' treatment by baths.
C to D represents recession of left border. Right border
superficial area normal.

Heart normal in size and position.

extremely severe and frequent attacks of asthma. Her condition would not permit of careful physical examination, but her lungs were emphysematous, obliterating cardiac area, and yielding upon auscultation evidence of extreme congestion at the bases. The patient was at once sent to the hospital, and for three days death was momentarily expected, opiates and powerful cardiac stimulants being employed to maintain action of the heart and prevent the spasmodic seizures which occurred every few hours.

A temporary improvement allowed the use of the bath, though it was only used as a dernier ressort and with much anxious foreboding.

The result was immediate relief and the initiation of a period of steady improvement, which continues to the present time and bids fair to place the patient once more upon her feet, though the right heart is still overworked and the lungs terribly damaged by the long continued overstrain. The pulse, which was 136 upon admission and during the first three days, dropped to 110 after the first bath, and is now 90. The respirations, which were 50 to the minute, are now 26. Pulmonary congestion has largely disappeared. Edema of the feet and ankles, marked upon admission is also entirely gone.

CASE V. DILATATION OF THE HEART DUE TO MITRAL REGURGITATION.

The writer's acknowledgments are due to Dr. Arslanides, Senior House Physician at the City and County Hospital, for the following report:

"J. M., age 28. Day-laborer, admitted to the City and County Hospital May 1, 1895. Complains of acute articular rheumatism. Examination discloses chronic thickening of the phalangeal and metacarpo-phalangeal joints; the right knee and both ankles are swollen and hot. Temperature ranges from 98° to 100° Fahrenheit. Pulse 80 to 100 beats per minute, irregular and unequal. Has had shortness of breath, palpitation and occasional fainting spells for some time past. Pain in his joints has been almost constant for the past year, and more or less severe for three years. Family history negative. No past illness of importance, save rheumatism, as described. Denies venereal disease. Examination of the chest showed marked dilatation of the heart, with loud blowing murmur at the apex, transmitted to the axilla and back, and accentuated pulmonary second sound. Apex beat diffuse, most distinct, 3 c. m. to the left of and 4 c. m. below the nipple line, the right border extending about 2 c. m. to the right of the right sternal border.

Patient was placed in bed and strychnia, digitalis and iron were administered with no material improvement.

On May 27, i. e., four weeks after admission, he was seen by Dr. Greene, whom I assisted in making examination of the heart first, preliminary to instituting treatment by baths, and, again, immediately after initial bath, May 29. The following result was obtained:

Before first bath.

After first bath.

Left border. 3 c. m. outside nipple line. 1 c. m. outside.

Reduction 2 c. m.

Right border. 2 c. m. to right of right sternal margin. At right sternal edge. Level of 5th rib

Reduction 2 c. m.

Total reduction 4 c. m.

Pulse before bath recumbent position 100 per minute, small, irregular and unequal; after and during bath 90 per minute, full and of equal force and tension.

May 30, second bath.

Before.

After.

Left border. 2 c. m. outside nipple. At nipple line.

Right border. Normal. Normal.

Pulse before bath 94, irregular, unequal.

Pulse after bath 72, regular, equal.

June 6, bath. Patient photographed by Dr. Greene on this day.

Left border $2\frac{1}{2}$ c. m. inside, 4 c. m. below nipple, i. e. normal.

Impulse normal on palpation and inspection. Position and size of heart normal. Pulse 72, regular, full and equal. Murmur in mitral area little affected. Patient feels better in every way; color of skin and mucous membranes brighter and better. Joints not troublesome. Duration of baths twelve minutes, given three days in succession, then omitting one day.

This citation of cases is somewhat tedious, but will serve to show the value of this treatment in diverse forms of disease affecting directly or indirectly the action of the heart and integrity of its innervation and musculature.

The first case is, perhaps, the most remarkable by reason of the terrible condition of the patient and extreme dilatation present, but cases two and five demonstrate the value of the method as applied to lesser degrees of the same trouble, while its applicability to and value in the asthmatic cases and in exophthalmic goitre is clearly shown.

This treatment will undoubtedly prove of value over a very wide field, and even the cases of pronounced arterio-sclerosis may, it is said, derive benefit from its use. This is not in accord with the views first expressed by Dr. Schott, nor is it easy to understand why such cases should be much improved by the use of such a system. Having, however, never so applied it, the writer cannot speak positively upon this point.

It is interesting to note the complete overthrow of the old idea that the bath was a source of danger in heart cases, and one may even doubt the truth of the idea still held that a hot bath is extremely weakening to these patients. One of the writer's cases was treated by baths of high temperature with the greatest benefit and precisely the same after effect noted in the cooler baths. A Turkish bath with a moist and terribly hot atmosphere must, of course, be a source of peril, but the hot bath in an ordinary atmosphere may fulfil a very useful purpose if carefully given, more



Case 5. J. M.

A B and G H show respectively right and left borders before the baths.

C D and E F. Same borders after six baths. A C = 2 c. m.
E G = 6 c. m.

Right border remained normal after first bath.

Dotted line cutting nipple indicates left border after second bath.

especially in the cases where some œdema or ascites exists.

Here as elsewhere the baths should be given by the physician himself or an attendant especially trained by him for the work, and their effects most carefully watched during every moment of immersion.

In the writer's opinion neither very hot nor very cold baths are really necessary, and the patient's feelings may be very safely taken as a guide. In the use of baths as cold as 81° Fahrenheit there seems to be some risk of chilling, and such risk seems entirely unnecessary, in view of the good effects resulting from the warmer baths.

Further, it does not appear that the use of the calcium chloride, valuable as it is for cutaneous stimulation, is absolutely necessary, and the odor is far from agreeable. Again, the use of the CO_2 in the bath, while very agreeable to the patient, is not a *sine qua non*, and has proven oftentimes somewhat of a burden. Dr. Arslanides has, however, devised a method of using the sodium bicarbonate and HCl , which is a distinct improvement over any method hitherto recommended. He dissolves his salts and permits the acid to flow from a bottle by siphonage into the bath from a considerable height. Used in this way it distributes nicely, and effervescence is readily maintained for a sufficient period.

One thing at least may be positively stated and will not be denied by any who have given especial attention to diseases of the heart., i. e., that no treatment by drugs, no rest treatment, and no

treatment by graduated exercises or hill climbing would produce so rapid and remarkable an improvement. Best of all, the treatment by baths is so simple as to require but little in the way of special training and appliances for its proper use.

The same cannot, however, be said of the movements. They are, in the writer's experience, very difficult to apply, requiring the most careful judgment and nicest skill in their use. They cannot be left with safety to anyone not thoroughly trained in their use and capable of reading and correctly interpreting the changes in pulse, facial expression and respiration which guide one in their application.

The tendency is to perform them *too rapidly* and with too great an *amount of resistance*. How many shall be used, what resistance made, what periods of rest granted, are factors varying with each individual case. That the movements are of distinct value will be granted by all who have carefully and intelligently used them.

The length of this paper precludes any elaborate discussion of the physiological basis of the action of these baths and movements, nor does any such discussion seem to be necessary. A careful application of the treatment will suffice to satisfy the most incredulous as to their efficacy, and those cases which more than almost any others baffle the skill of the practising physician will be found capable of marked amelioration and grateful relief.

With a final apology for the length of the paper, and with many thanks for your kind consideration,

the writer recommends to all this simple yet scientific method of treatment which has been developed and freely given to the world by the brothers Schott.

